

Sugary Drink Consumption in Colorado

Facts for Action:

Chronic Diseases and Related Risk Factors in Colorado

What is a sugary drink?

Sodas, fruit drinks, energy and sports drinks, sweetened coffees and teas, and flavored milks contain added sugars. Most of these “sugary drinks” provide little or no nutritional value. 100% fruit juice is not included in the “sugary drink” data in this fact sheet.

29.4%

In Colorado in 2013, 29.4% of **adults** and...

55.8%

of **high school students** consumed some type of sugary drink:

18.0% drank regular soda daily;

11.5% drank sports drinks daily;

4.6% drank energy drinks daily;

15.1% drank other sugary drinks like sweetened teas, lemonades, or fruit drinks daily.

18.9%

18.9% of **children** consumed one or more sugary drinks per day.

Consumption of sugary drinks is an important contributor to the obesity epidemic.¹

Sugary drinks contain the largest portion of added sugar in the American diet. Studies have shown that daily consumption of sugary drinks is linked to:

- Overall poor nutrition;
- Weight gain;
- Obesity;
- Type 2 diabetes;
- Metabolic syndrome;
- Heart disease, including heart attack;
- Poor oral health, including tooth decay; and
- Gout.



1
can of soda
per day

=51,100
calories per year

Reducing sugary drink consumption can lead to better weight control among those who are overweight.

The U.S. Department of Health and Human Services recommends that individuals consume **less than 10% of their daily calories in added sugars.**²

Nationally, among all adults:

- Total added sugars account for around 270 calories per day — 13.5% of the recommended calorie intake for a moderately active 26-50 year-old female.
- Of those 270 calories, 47% or about 127 calories comes from sugary drinks.

In Colorado, among daily consumers of sugary drinks:

- The average adult consumes **58,600 calories** from sugary drinks alone every year—160 calories every day on average.
 - The average high school student consumes over **108,200 calories** from sugary drinks every year — 54 days' worth of calories for an average teen.
- Children receive a significant portion of their calories from sugary drinks — 1-to-14 year-olds consume **39,800 calories** of sugar from sugary drinks alone every year on average.

Data Sources: Child Health Survey, Healthy Kids Colorado Survey, Behavioral Risk Factor Surveillance System.



COLORADO
Department of Public
Health & Environment

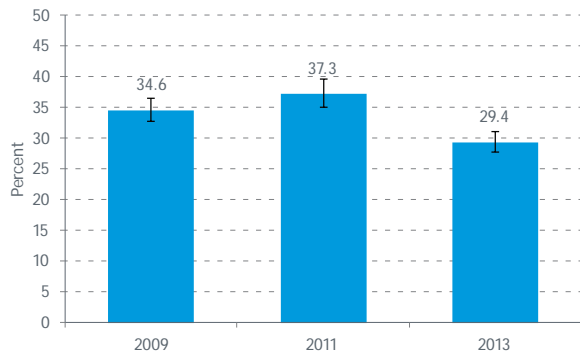
August 2016



Adults

Sugary drink consumption decreased significantly from 2009 to 2013, from 34.6% in 2009 to 29.4% in 2013.

Figure 1: Percent of adults aged 18+ who consumed one or more sugary drinks per day, Colorado, 2009-2013.

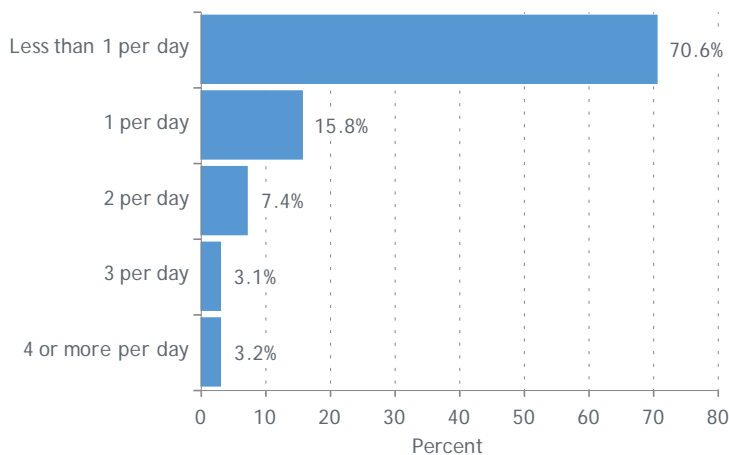


Data source: Behavioral Risk Factor Surveillance System.

Note: Survey methodology changed in 2011. Trend data should be interpreted with caution.

Although most adult Coloradans consume less than one sugary drink per day, 29.4% consume one or more per day. Among those who consume one or more per day, most report consuming 1 per day on average.

Figure 2: Frequency of sugary drink consumption among adults aged 18+, Colorado, 2013.



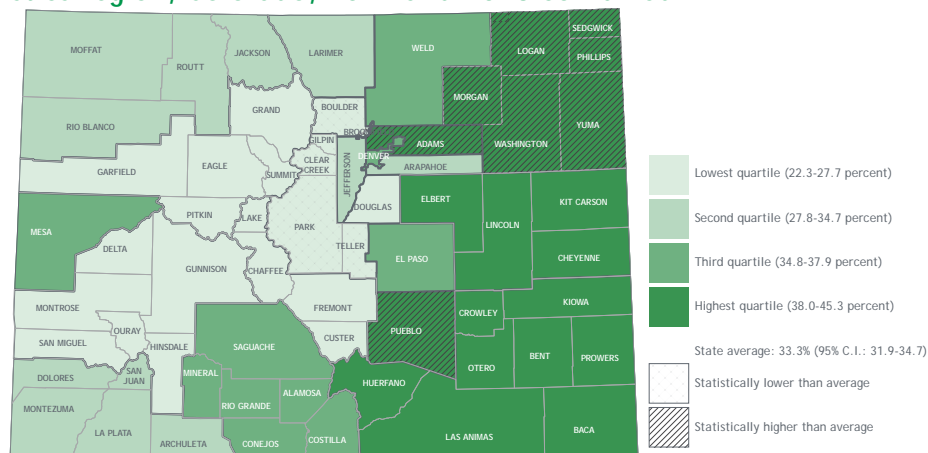
Data source: Behavioral Risk Factor Surveillance System.

The average adult who drinks one or more sugary drinks every day consumes **33 pounds of sugar every year** from sugary drinks alone.



The **Eastern plains of Colorado** have the highest prevalence of daily sugary drink consumption in the state.

Figure 3: Percent of adults aged 18+ who consumed one or more sugary drinks per day, by health statistics region, Colorado, 2011 and 2013 combined.

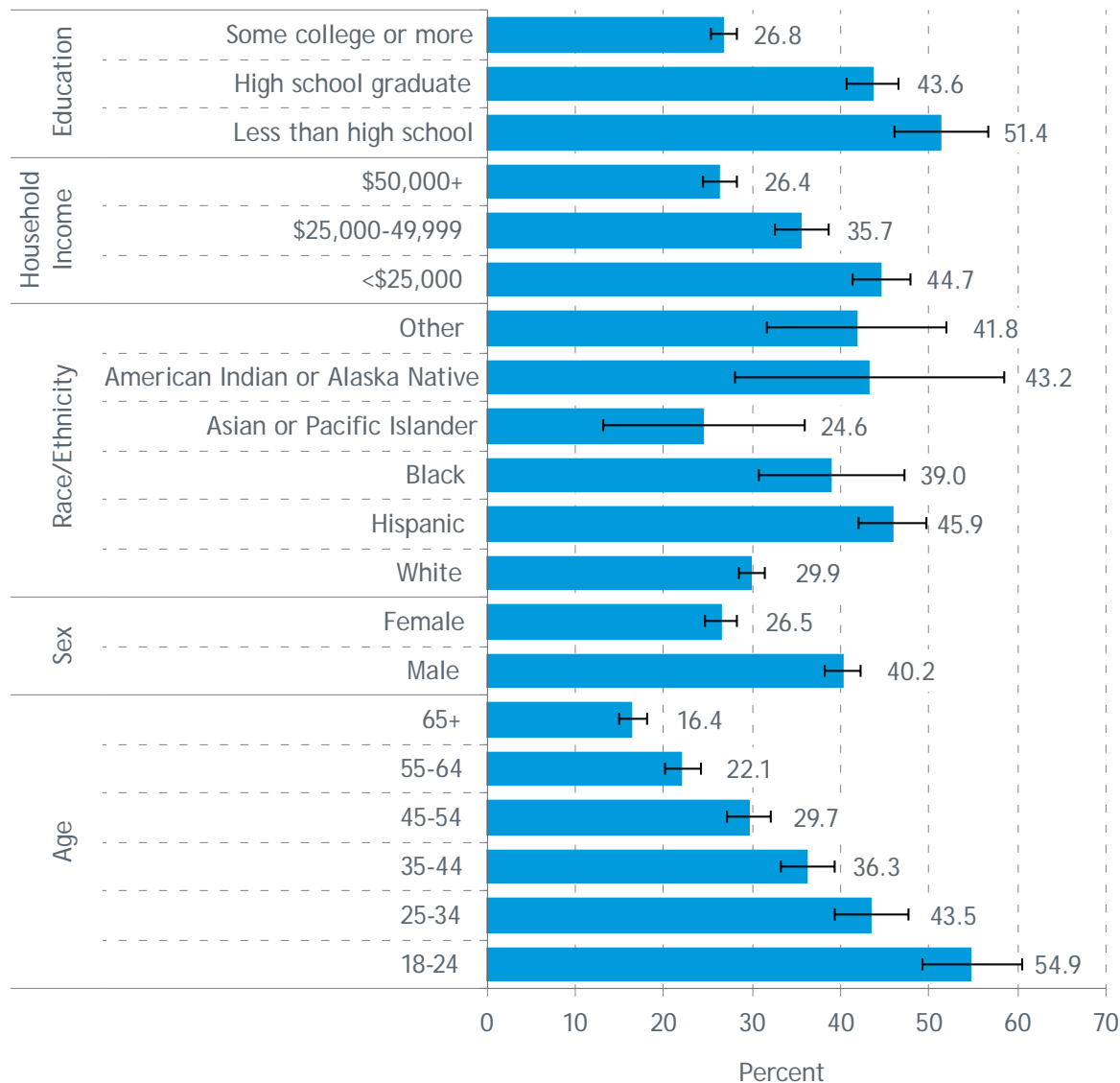


Data source: Behavioral Risk Factor Surveillance System.

Many disparities exist in sugary drink consumption among adults.

- By age: **Daily sugary drink consumption steadily declines with age** — 54.9% of 18-24 year olds consume one or more sugary drinks per day, but 16.4% of those 65 or older do.
- By sex: **Males** are much more likely to consume sugary drinks daily than females (40.2% compared with 26.5%).
- By race and ethnicity: **Hispanic Coloradans** are significantly more likely to consume sugary drinks daily, compared with White and Asian or Pacific Islander Coloradans.
- By income: **Adults who live in households earning less than \$25,000 per year** are most likely to consume sugary drinks daily, 44.7%, compared with 26.4% of those in households earning over \$50,000.
- By education: **Less educational attainment is related to higher sugary drink consumption** — 51.4% of those with less than a high school diploma/GED consume sugary drinks daily, compared with 26.8% of those who attended at least some college.
- By housing and food insecurity: **Adults who worry about affording food and housing** are much more likely to consume sugary drinks daily — 38.4% of adults who worry about affording their rent or mortgage drink sugary drinks daily, compared to 24.4% of those who do not, and 40.8% of those who worry about affording nutritious food drink sugary drinks daily compared to 25.5% of those who do not.

Figure 4: Percent of adults aged 18+ who consumed one or more sugary drinks per day by demographic factors, Colorado, 2011 and 2013 combined.

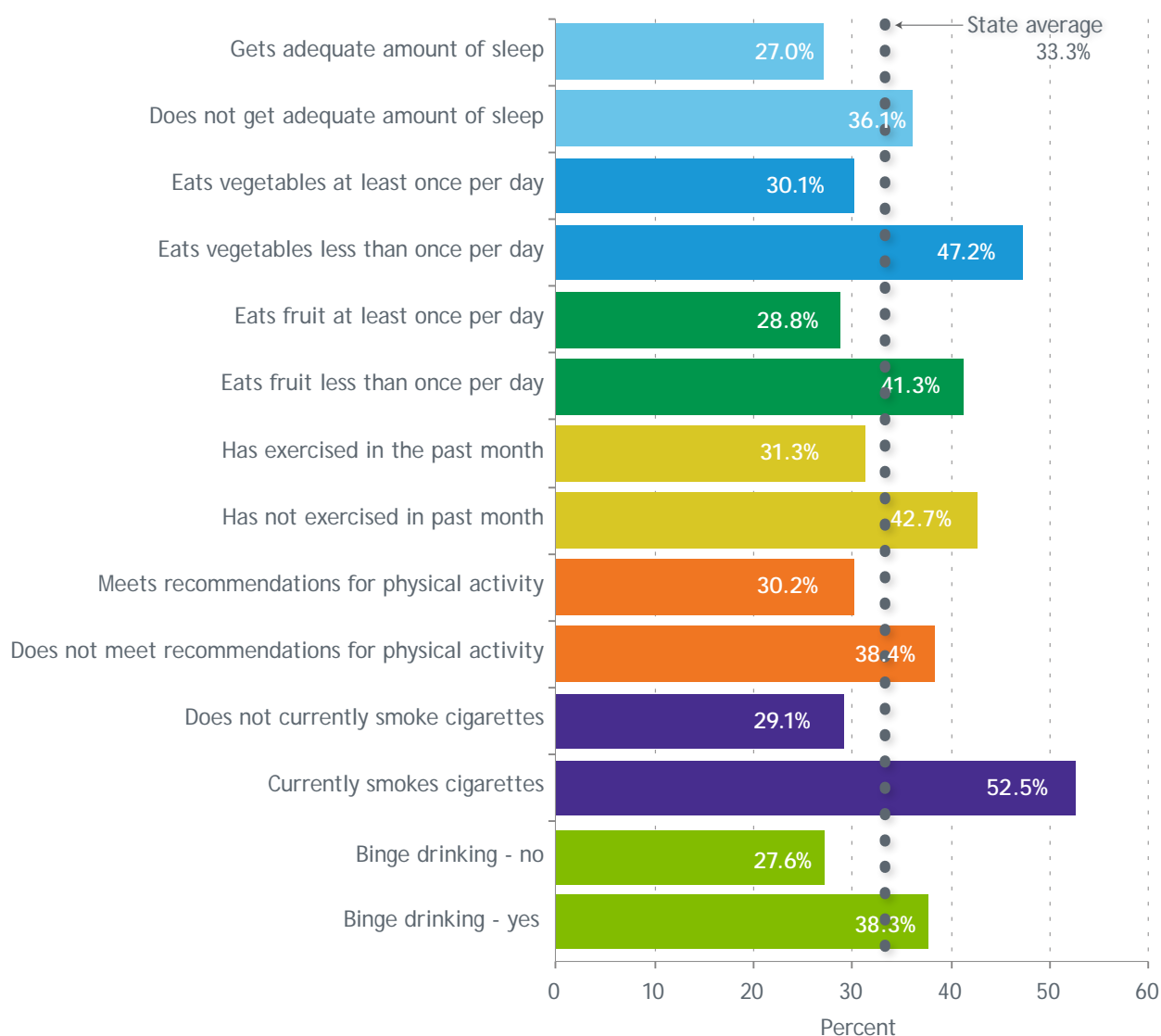


Data source: Colorado Behavioral Risk Factor Surveillance System.

Adults who engage in other unhealthy behaviors, especially smoking, are much more likely to drink sugary drinks.

- 52.5% of current smokers consume sugary drinks daily, compared to 29.1% of non-smokers.
- 42.7% of those who have not exercised in the past month consume sugary drinks daily, compared to 31.3% of those who have exercised.
- Individuals who eat fruits or vegetables less than once per day are much more likely to consume sugary drinks—41.3% of those who don't eat fruit consume sugary drinks, compared to 28.8% of those who do, and 47.2% of those who don't eat vegetables consume sugary drinks, compared to 30.1% of those who do.
- More people who do not get adequate sleep consume sugary drinks daily—36.1% of adults who get less than 7 hours of sleep per night drink sugary drinks daily, compared to 27.0% of those who do get adequate sleep (at least 7 hours per night).

Figure 5: Percent of adults aged 18+ who consumed one or more sugary drinks per day, by other health-related behaviors, Colorado, 2011 and 2013 combined.



Data source: Behavioral Risk Factor Surveillance System.

Adults in poor physical and mental health consume more sugary drinks than healthy adults.

- 40.7% of **adults who report fair or poor health** consume sugary drinks daily, compared with 32.1% of those who report good or better health.
- **People who report poor mental health** are also more likely to consume sugary drinks daily — 40.5% of those who reported having 14 or more poor mental health days in the past 30 days drink sugary drinks daily, compared with 32.4% of those who had less than 14 poor mental health days.
- 37.2% of **adults who have ever been told they have a depressive disorder** consume sugary drinks daily compared with 32.4% of those who have not.
- 35.6% of **obese adults** consume sugary drinks daily, compared with 30.7% of adults with a healthy weight, but this difference was not statistically significant.

A recent study estimated that consumption of sugary drinks is associated with up to **26% increased risk of developing type 2 diabetes**.³

Even though Coloradans with diagnosed diabetes are less likely than the general population to consume sugary drinks daily, **19.5% of adults with diabetes still consume one or more sugary drinks per day**. The American Diabetes Association recommends that people with diabetes avoid all sugary drinks, since they can significantly increase blood glucose and have no nutritional value.⁴

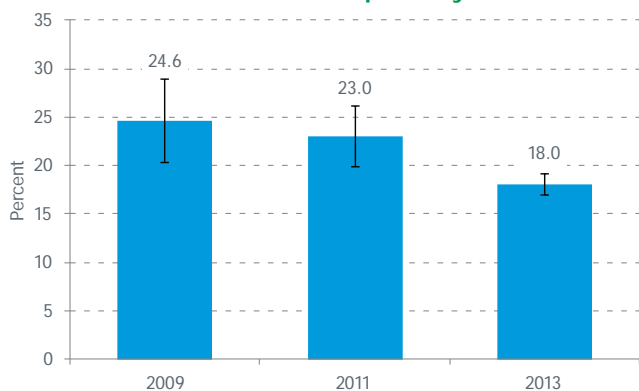
Disparities in diabetes prevalence mirror those found in sugary drink consumption rates—**adult diabetes prevalence is highest among Hispanic and Black Coloradans, those with less than a high school education, and those with lower household income**.



High School Students

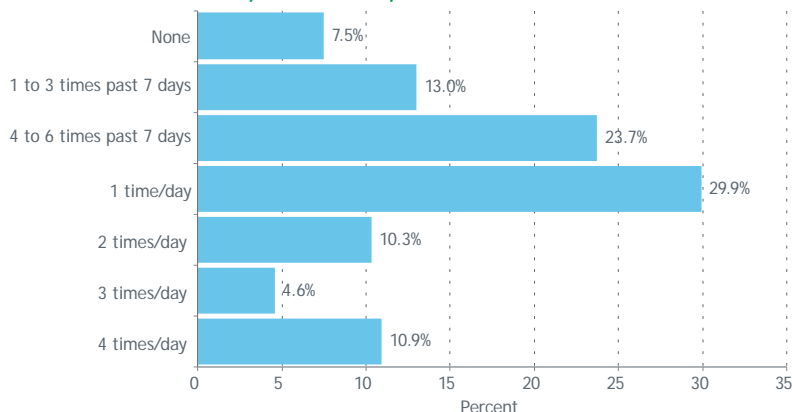
The prevalence of daily soda consumption has decreased from 2009 to 2013.

Figure 6: Percent of high school students who consumed one or more sodas per day, Colorado, 2009-2013.



Data source: Healthy Kids Colorado Survey.

Figure 7: Sugary drink* consumption among high school students, Colorado, 2013.



Data source: Healthy Kids Colorado Survey, 2013.

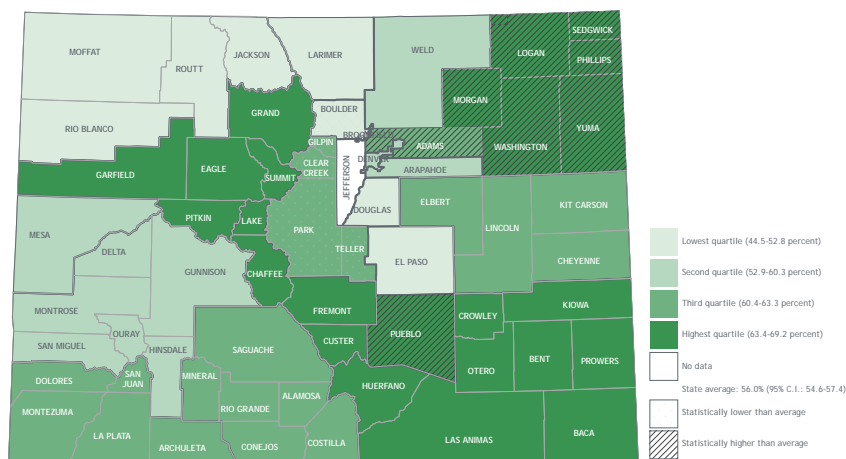
*"Sugary drinks" includes soda, sports and energy drinks, and other sugar-sweetened drinks.

High school students consume the greatest volume of sugary drinks—an equivalent of 30.8 pounds of sugar annually per student, and 55.8% of high school students consume one or more sugary drinks per day. In addition to these daily consumers, 36.7% of high school students consume sugary drinks between 1 and 6 times per week. Only 7.5% of high school students consume no sugary drinks. The students who drink one or more sugary drinks per day **consume an average of 61 pounds of sugar per year** from these drinks alone.



Daily sugary drink consumption varies across Colorado. **Northeastern Colorado and Pueblo County** had a significantly **higher prevalence of daily sugary drink consumption** than the state average in 2013, whereas Boulder County and the central mountain region that includes Park, Teller, Clear Creek, and Gilpin counties had a significantly lower prevalence.

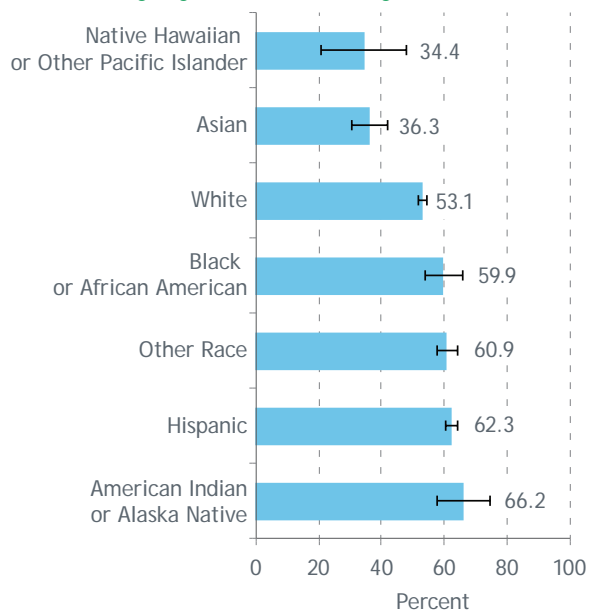
Figure 8: Percent of high school students who consumed one or more sugary drinks per day, by health statistics region, Colorado, 2013.



Data source: Healthy Kids Colorado Survey.

Similar to adults, there are significant disparities in sugary drink consumption for high school students by sex and race/ethnicity. Students who identify as male are much more likely to consume sugary drinks daily — **63.1% of male students** reported consuming sugary drinks, compared to **48.4% of female students**. American Indian or Alaska Native, Hispanic, and Black students are more likely to drink sugary drinks daily than Asian, Native Hawaiian, or other Pacific Islander students.

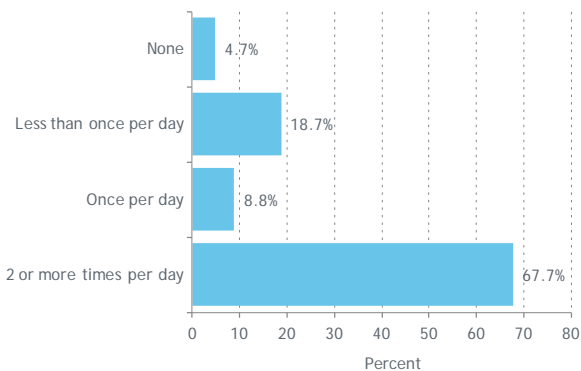
Figure 9: Percent of high school students who consumed one or more sugary drink per day by race/ethnicity, Colorado, 2013.



Data source: Healthy Kids Colorado Survey.

67.7% of high school students consume water 2 or more times per day and 35.4% consume water 4 or more times per day. **Those who consume water 1 time or less per day** are more likely to consume sugary drinks daily. For example, among those who consume water 1 time per day 70.4% consume sugary drinks daily, while among those who consume water 4 or more times per day 48.9% consume sugary drinks daily.

Figure 10: Frequency of water consumption among high school students, Colorado, 2013.



Data source: Healthy Kids Colorado Survey.

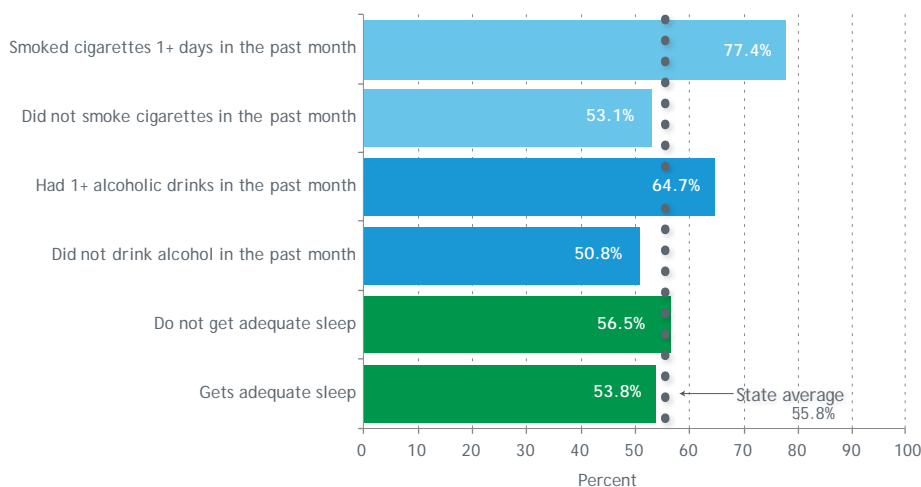
Diet Soda

The CDC estimates that 1 in 5 U.S. adults consume diet drinks on any given day. In Colorado, **5.7% of high school students consume diet sodas daily**. Colorado data is not available for adults. Diet drinks typically have no caloric content, and may be considered a good short-term alternative to regular soda for those looking to lose weight. However, diet drinks have also been linked to obesity.⁵ Just like regular soda, diet soda has no nutritional value.

Similar to adults, high school students who engage in **other unhealthy behaviors, especially cigarette smoking**, are much more likely to consume sugary drinks daily.

- 61.5% of obese students and 56.5% of overweight students consume sugary drinks daily, compared to 54.8% of students at a healthy weight – this difference was not statistically significant.
- 77.4% of students who **smoke** consume sugary drinks daily, compared to 53.1% of students who do not smoke.
- 64.7% of students who **drink alcohol** consume sugary drinks, compared to 50.8% of students who do not drink.
- 56.5% of students who **do not get adequate sleep** consume sugary drinks, compared to 53.8% of students who do get adequate sleep.

Figure 11: Percent of high school students who consumed one or more sugary drinks per day by other health-related behaviors, Colorado, 2013.



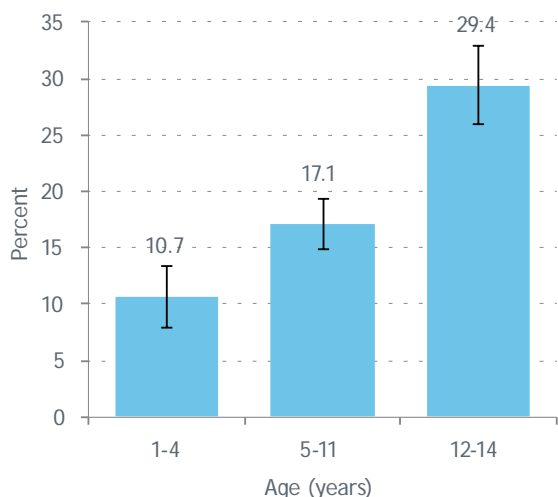
Data source: Healthy Kids Colorado Survey.



Children

14.4% of children ages 1-14 consume sugary drinks daily, with 11.1% consuming 1 per day and 3.3% consuming 2 or more per day. Daily sugary drink consumption increases with age.

Figure 12: Percent of children ages 1-14 who consumed one or more sugary drinks per day, by age group, Colorado, 2012-2014.

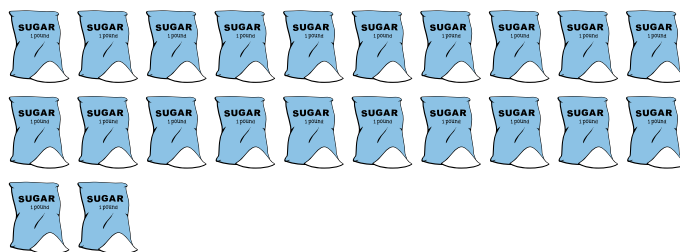


Data source: Colorado Child Health Survey.

Children ages 1-14 who drank sugary drinks daily consumed 22.4 pounds of sugar:

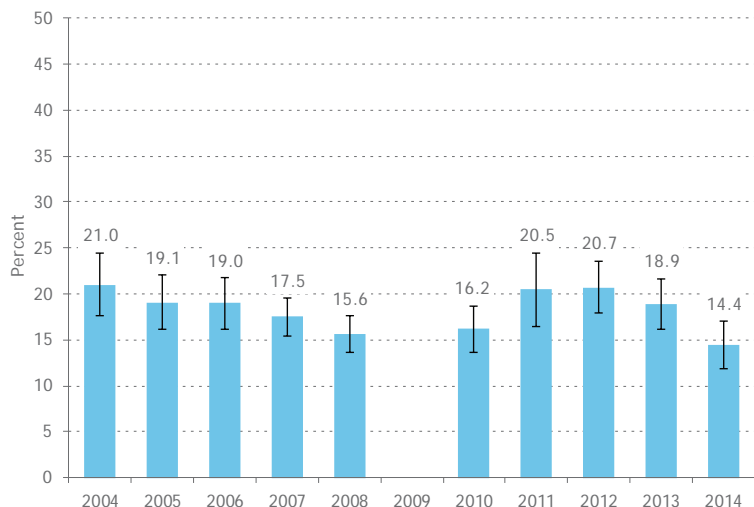
- 1-4 year olds consumed **21.5 pounds of sugar**
- 5-11 year olds consumed **21.6 pounds of sugar**
- 12-14 year olds consumed **23.8 pounds of sugar**

...per year, from sugary drinks alone.



There was no statistically significant change in sugary drink consumption for children from 2004 to 2013. The prevalence in 2014 was not significantly lower than in 2013 but was significantly lower than in 2004.

Figure 13: Percent of children ages 1-14 who consumed one or more sugary drinks per day, Colorado, 2004-2014.



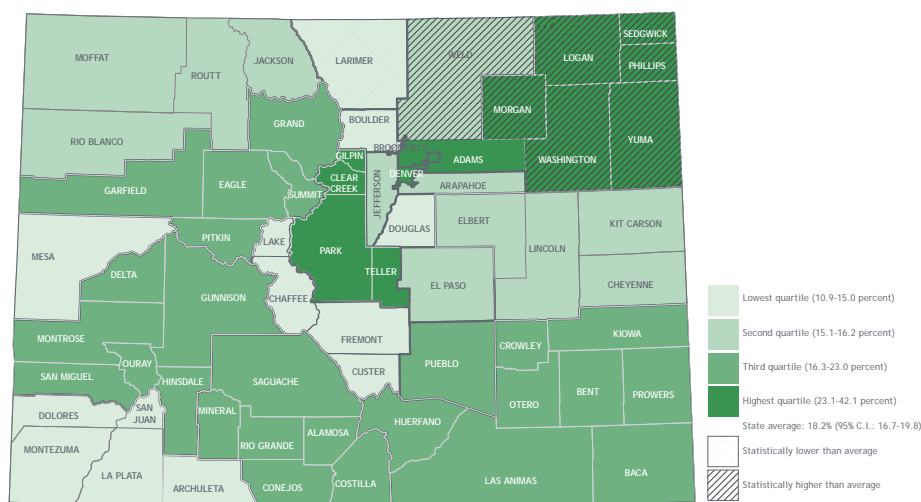
Data source: Colorado Child Health Survey.

Note: Data unavailable in 2009.

Survey methodology changed in 2011 — trend data should be interpreted with caution.

Similar to adults, daily sugary drink consumption for children is highest in northeastern Colorado. However, where adults' consumption is lowest in the central mountain region, consumption for children in these areas is much higher.

Figure 14: Percent of children ages 1-14 who consumed one or more sugary drinks per day, by region Colorado, 2012-2014.



Data source: Colorado Child Health Survey, 2014.

Tooth decay is the most common chronic disease in children.

Sugary drinks, including fruit juices, are significant contributors to tooth decay and enamel erosion. Many sodas contain acids like phosphoric acid, which also erode tooth enamel. Diet drinks cause decay through a similar mechanism—they produce acids in the mouth which wear down teeth, allowing cavities to develop.

■ In 2011-2012, 55% of third grade students in Colorado had developed cavities, with 14% of those children at risk for toothaches due to untreated cavities.

Children ages 1-14 years whose teeth are in fair or poor condition as determined by parent report, are more likely to consume sugary drinks.

■ 21.5% of children whose teeth are in fair or poor condition consume sugary drinks daily, compared to 14.1% of children whose teeth are in good condition.

18.1% of children who have delayed dental care consume sugary drinks daily, compared to 14.3% of children who have not delayed dental care.

Data sources: Oral Health Basic Screening Survey, Colorado Child Health Survey.

Daily consumption of 100% fruit juice is more common than daily consumption of the other sugary drinks described in this fact sheet. 31.0% of children aged 1-14 years consumed one or more glasses of 100% fruit juice every day.

100% fruit juice is frequently thought of as a healthy choice and included in total fruit consumption guidelines.⁶ Unlike other sugary drinks, juices contain some nutrients. However, many nutrients, especially fiber, are removed from the fruit in the juice making process. An eight ounce glass of 100% apple juice contains 24 grams of sugar, only slightly less than the 26 grams of sugar found in the same amount of cola.

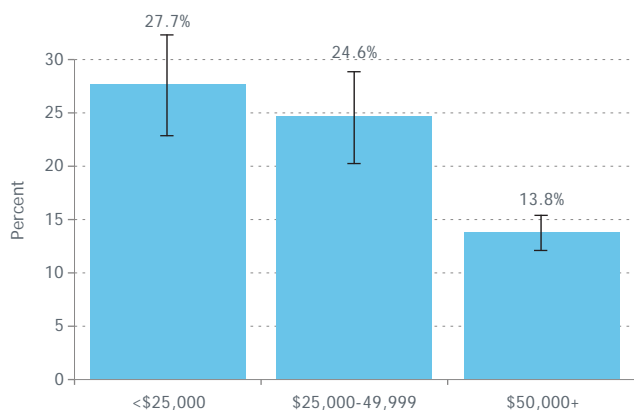
Juice drinks that contain less than 100% juice have very little nutritional value, and are included as a sugary drink in this fact sheet. These fruit drinks, and other sugary drinks including soda, sports drinks, and flavored milks, are now banned at licensed early childhood education centers in Colorado. 100% fruit juice has also been limited to twice per week.⁷

Sugary drink consumption among children ages 1-14 years is [linked to parent consumption](#). 25.5% of children who had a parent who consumed sugary drinks daily also consumed sugary drinks every day, compared to 14.7% of children whose parents did not drink sugary drinks daily.

Children who drink sugary drinks are [more likely to live in households with food insecurity and have poorer nutrition overall](#). Food insecurity was defined as sometimes or often relying on only a few kinds of low-cost food because of running out of money to buy food in the past year.

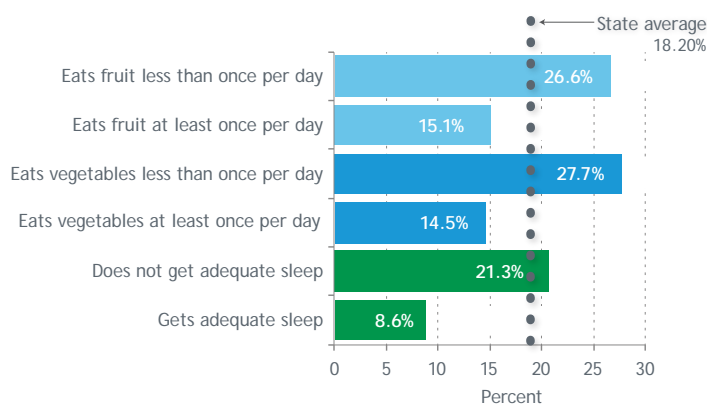
- 26.6% of children who live in households with food insecurity consume one or more sugary drinks per day, compared to 14.4% of those who do not.
- Sugary drink consumption is highest for children [who live in households that earn less than \\$25,000 annually \(27.7%\)](#).
- 25.9% of children do not eat vegetables every day. [27.7% of these children drink sugary drinks every day](#), compared to 14.5% of those who do eat vegetables at least once per day. Similarly, among children who do not eat fruit every day, 26.6% drink sugary drinks every day, compared to 15.1% of children who do eat fruit at least once per day.
- [21.3% of children who do not get adequate sleep drink sugary drinks](#), compared to 8.6% of those who do get adequate sleep.⁸
- [21.3% of obese children and 18.4% of overweight children consume sugary drinks daily](#), compared to 12.7% of children who are healthy weight, however, this was not statistically significant.

Figure 15: Percent of children ages 1-14 who consumed at least one sugary drink per day, by household income, Colorado, 2012-2014.



Data source: Colorado Child Health Survey.

Figure 16: Percent of children ages 1-14 years who consumed one or more sugary drinks per day, by other health-related behaviors, Colorado, 2012-2014.



Data source: Colorado Child Health Survey.

Caffeine

Many sugary drinks, including soda, coffee drinks, and teas, contain caffeine. Caffeine is classified by the Food and Drug Administration as both a drug and a food additive. The FDA has not yet released recommendations for children's caffeine consumption, but the American Academy of Pediatrics recommends that children and adolescents never drink energy drinks and avoid other caffeine-containing drinks.⁹

Evidence about caffeine consumption and its link to other health problems is mixed. Caffeine has been linked to a number of harmful effects in children, including effects on the developing neurologic and cardiovascular systems.⁹ Some studies argue that caffeine consumption increases insulin resistance and can disrupt sleep, contributing to the risk of obesity and diabetes. It is also dependence forming, and can induce withdrawal symptoms.¹⁰

End Notes

- 1 Harvard School of Public Health. "Sugary Drink Supersizing and the Obesity Epidemic." The Nutrition Source Website. www.hsph.harvard.edu/nutritionsource/sugary-drinks-fact-sheet/
- 2 US Department of Health and Human Services and US Department of Agriculture. 2015-2020 Dietary Guidelines for Americans. 8th Edition. December 2015. Available at <http://health.gov/dietaryguidelines/2015/guidelines>.
- 3 Malik, V.S., Popkin, B.M., Bray, G.A., Després, J., Willett, W.C., and Hu, F.B. "Sugar-Sweetened Beverages and Risk of Metabolic Syndrome and Type 2 Diabetes: A meta-analysis." *Diabetes Care*: November 2010, 33.11: 2477-83.
- 4 American Diabetes Association. "What Can I Drink?" American Diabetes Association Website. www.diabetes.org/food-and-fitness/food/what-can-i-eat/making-healthy-food-choices/what-can-i-drink.html?
- 5 Bleich, S.N., Wolfson, J.A., Vine, S., and Wang, Y.C. "Diet Beverage Consumption and Caloric Intake Among US Adults, Overall and by Body Weight." *American Journal of Public Health*: March 2014, 104.3: e72-e78.
- 6 US Department of Agriculture. "All About the Fruit Group." ChooseMyPlate.gov Website. www.choosemyplate.gov/fruit.
- 7 Colorado Department of Human Services Office of Early Childhood. "Child Care Facility Licensing Rules (2/1/2016). Rules and Regulations website. www.coloradoofficeofearlychildhood.com/rulesandregulations.
- 8 American Academy of Sleep Medicine's recommendations for sleep are as follows: 11+ hours for toddlers (1-2 year olds), 10+ hours for preschoolers (3-5 year olds), 9+ hours for school-aged children (6-12 year olds), 8+ hours for teenagers (13-17 year olds).
- 9 American Academy of Pediatrics: Committee on Nutrition and the Council on Sports Medicine and Fitness. "Clinical Report—Sports Drinks and Energy Drinks for Children and Adolescents: Are They Appropriate?" *Pediatrics*: May 2011.
- 10 Griffiths, R.R., Juliano, L.M., and Chausmer, A.L. "Caffeine pharmacology and clinical effects." In: Graham, A.W., Schultz, T.L., Mayo-Smith, M.F., Ries, R.K., and Wilford, B.B. (eds.) *Principles of Addiction Medicine*, Third Edition (193-224). Chevy Chase, MD: American Society of Addiction.